BRUHATH BANGALORE MAHANAGARA PALIKE

Name of the Agency	:	**Mr. H.S. Nataraj,** Contractor, Bangalore.
Name of the Work	:	Improvements to asphalting roads and drains at Coffee Board Layout Main Roads in Ward No.07, BBMP, Bangalore.
Estimate Cost	:	Rs.

QUALITY CONTROL REPORTS TO

Asst. Executive Engineer,
Kodigehalli Sub Division,
BBMP, Bangalore.

CIVIL-TECH CONSULTANTS & ENGINEERS

Building & Highway Material Testing Laboratory
NABL ACCREDITED LABORATOTY AS PER ISO / IEC – 17025:2005
No.23/14, 7th Cross, 3rd Stage, 4th Block, Shakthi Ganapathi Nagara,
Basaveshwaranagar, Bangalore – 560 079.

QUALITY CONTROL REPORTS

WET MIX MACADAM (WMM)

CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

An ISO 9001:2008 Certified Company

NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

JAS-ANZ BSCIC ISO 9001 REGISTERED

Job No.: CTCE/BBMP/W.No 07/HSN/WMM/Gradation/2014-15

04.08.2014

GRADATION FOR WMM

MORTH TABLE-400-11

Client : **Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.

Agency : **Mr. H.S. Nataraj,** Contractor, Bangalore.

Name of Work : Improvements to asphalting roads and drains at Coffee Board Layout Main Roads in Ward No.07, BBMP, Bangalore.

Reference : EE/BTP/BBMP-E-PMT/56/2014-15 Dated: 18.07.2014

Date of Testing : 04.08.2014

Material : WMM

Sample Location : WMM Mix Plant

Oven Dry Wt (gm): **7970**

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	125	125	1.6	98.4	95-100
22.4	2685	2810	35.3	64.7	60-80
11.2	1310	4120	51.7	48.3	40-60
4.75	1020	5140	64.5	35.5	25-40
2.36	995	6135	77.0	23.0	15-30
0.600	850	6985	87.6	12.4	8-22
0.075	685	7670	96.2	3.8	0-8

Note:

1. The report shall not be reproduced, except in full, without the written approval of the laboratory.
2. The results indicated above are based on the tests carried out on the samples received in the laboratory.
3. Any Query regarding the report must be reported within 30 days from the date of testing.

M/s. Civil-Tech Consultants & Engineers
23/14, 7th Cross, 3rd Stage,
4th Block, Shakthiganapathinagara,
Basaveshwaranagar,
Bangalore-560079.

CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

An ISO 9001:2008 Certified Company

NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

JAS-ANZ BSCIC ISO 9001 REGISTERED

Job No.: CTCE/BBMP/W.No 07/HSN/WMM/AIV/2014-15

04.08.2014

Aggregate Impact Value

IS: 2386 Part IV

Client	**Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.
Agency	**Mr. H.S. Nataraj,** Contractor, Bangalore.
Name of the Work	Improvements to asphalting roads and drains at Coffee Board Layout Main Roads in Ward No.07, BBMP, Bangalore.
Reference	EE/BTP/BBMP-E-PMT/56/2014-15 Dated: 18.07.2014
Source / Location	WMM Plant
Type of Mix	Wet Mix macadam
Date of Testing	04.08.2014

Sl No.	Details	Trial No. 1	Trial No. 2	Average
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	385	386	
2	Weight of agregate passing 2.36 mm sieve after the test = W_2 g	84	85	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	301	301	
4	Aggregate Impact value = percent fines	21.82	22.02	
	100* (W_2/W_1)%			**21.92**

Comments:

→ Maximum allowable Aggregate Impact value for Wet mix Macadam is 30%

Note:

→ This test report should not be reproduced except in full, without written approval of the laboratory

→ The results indicated above are based on the tests carried out on the samples received in the laborat

→ Any Query regarding the report must be reported within 30 days from the date of testing.

M/s. Civil-Tech Consultants & Engineers
23/14, 7th Cross, 3rd Stage,
4th Block, Shakthiganapathinagara,
Basaveshwaranagar,
Bangalore-560079.

CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

An ISO 9001:2008 Certified Company

NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

JAS-ANZ BSCIC ISO 9001 REGISTERED

Job No.: CTCE/BBMP/W.No 07/HSN/WMM/S-T/2014-15 04.08.2014

DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

Client	**Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.
Agency	**Mr. H.S. Nataraj,** Contractor, Bangalore.
Name of Work	Improvements to asphalting roads and drains at Coffee Board Layout Main Roads in Ward No.07, BBMP, Bangalore.
Reference	EE/BTP/BBMP-E-PMT/56/2014-15 Dated: 18.07.2014
Technical Reference	IS 2386(Part 1) 1963 (RA 2011)
Type of Mix	Wet Mix Macadam
Date of Testing	04.08.2014



Civil-Tech Consultants & Engineers Bangalore

Result : Flakiness Index = **11.05%**

Elongation Index = **13.20%**

Result : Combined Flakiness & Elongation index **24.25%**

Comments:

Maximum allowable Flakiness & Elongation Index for Wet Mix Macadam is 30%

Note:

→ This test report should not be reproduced except in full, without written approval of the laboratory

→ The results indicated above are based on the tests carried out on the samples received in the laborat

→ Any Query regarding the report must be reported within 30 days from the date of testing.

M/s. Civil-Tech Consultants & Engineers
23/14, 7th Cross, 3rd Stage,
4th Block, Shakthiganapathinagara,
Basaveshwaranagar,
Bangalore-560079.

QUALITY CONTROL REPORTS FOR

SEMI DENSE BITUMINOUS CONCRETE

CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

An ISO 9001:2008 Certified Company

NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

JAS-ANZ BSCIC ISO 9001 REGISTERED

Job No.: CTCE/BBMP/W. No 07/HSN/SDBC(QB)/2014-15

18.08.2014

TEST REPORT ON DETERMINATION OF BITUMEN CHARACTERISTICS

CLIENT	:	**Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.
AGENCY	:	**Mr. H.S. Nataraj,** Contractor, Bangalore.
NAME OF THE WORK	:	Improvements to asphalting roads and drains at Coffee Board Layout Main Roads in Ward No.07, BBMP, Bangalore.
REFERENCE	:	EE/BTP/BBMP-E-PMT/56/2014-15 Dated: 18.07.2014
SOURCE OF LOCATION	:	Hot mix Plant, Bangalore
DATE OF TESTING	:	18.08.2014

The results of the tests conducted on the bitumen sample.

Sl. No	Description	Test Method as per IS	Test Result	Requirement as per IS:73:2013
1	Penetration at 25 ^{0}C, 1/10 mm	IS :1203 -1978 (RA-2009)	82	80 to 100
2	Softening point, ^{0}C	IS :1205 -1978 (RA-2009)	45	Min. 40
3	Ductility at 27^{0}C, cm	IS :1208 -1978 (RA-2009)	100 >	Min. 75
4	Flash Point, ^{0}C	IS :1209 -1978 (RA-2009)	304	Min. 220

Civil-Tech Consultants & Engineers Bangalore

Note:

⇒ This test report shall not be reproduced except in full, without written approval of the laboratory.

⇒ The results indicated above are based on the tests carried out on the samples received in the laboratory.

⇒ Any Query regarding the report must be reported within 30 days from the date of testing.

M/s. Civil-Tech Consultants & Engineers
23/14, 7th Cross, 3rd Stage,
4th Block, Shakthiganapathinagara,
Basaveshwaranagar,
Bangalore-560079.

CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

An ISO 9001:2008 Certified Company

NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

JAS-ANZ BSCIC ISO 9001 REGISTERED

Job No.: CTCE/BBMP/W. No 07/HSN/SDBC/AIV/2014-15

18.08.2014

Aggregate Impact Value

IS: 2386 Part IV

Client	**Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP,
Agency	**Mr. H.S. Nataraj,** Contractor, Bangalore.
Name of the Work	Improvements to asphalting roads and drains at Coffee Board Layout Main Roads in Ward No.07, BBMP, Bangalore.
Reference	EE/BTP/BBMP-E-PMT/56/2014-15 Dated: 18.07.2014
Source / Location	Hot Mix Plant, Bangalore
Type of Mix	Semi Dense Bituminous Concrete
Date of Testing	18.08.2014

Sl No.	Details	Trial No. 1	Trial No. 2	Average
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	378	380	
2	Weight of agregate passing 2.36 mm sieve after the test = W_2 g	78	79	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	300	301	
4	Aggregate Impact value = percent fines 100* (W_2/W_1)%	20.63	20.79	**20.71**

Comments:

→ Maximum allowable Aggregate Impact value for Semi Dense Bituminous Concrete is 27%

Note:

Þ This test report should not be reproduced except in full, without written approval of the laborat

Þ The results indicated above are based on the tests carried out on the samples received in the lab

Þ Any Query regarding the report must be reported within 30 days from the date of testing.

M/s. Civil-Tech Consultants & Engineers

23/14, 7th Cross, 3rd Stage,
4th Block, Shakthiganapathinagara,
Basaveshwaranagar,
Bangalore-560079.

CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

An ISO 9001:2008 Certified Company

NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

JAS-ANZ BSCIC ISO 9001 REGISTERED

Job No.: CTCE/BBMP/W. No 07/HSN/SDBC/AIV/2014-15



18.08.2014

Aggregate Impact Value

IS: 2386 Part IV

Client	**Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP,
Agency	**Mr. H.S. Nataraj,** Contractor, Bangalore.
Name of the Work	Improvements to asphalting roads and drains at Coffee Board Layout Main Roads in Ward No.07, BBMP, Bangalore.
Reference	EE/BTP/BBMP-E-PMT/56/2014-15 Dated: 18.07.2014
Source / Location	Hot Mix Plant, Bangalore
Type of Mix	Semi Dense Bituminous Concrete
Date of Testing	18.08.2014

Sl No.	Details	Trial No. 1	Trial No. 2	Average
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	385	386	
2	Weight of agregate passing 2.36 mm sieve after the test = W_2 g	82	84	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	303	302	
4	Aggregate Impact value = percent fines 100* (W_2/W_1)%	21.30	21.76	**21.53**

Comments:

→ Maximum allowable Aggregate Impact value for Semi Dense Bituminous Concrete is 27%

Civil-Tech Consultants & Engineers Bangalore

Note:

Þ This test report should not be reproduced except in full, without written approval of the laborat

Þ The results indicated above are based on the tests carried out on the samples received in the lab

Þ Any Query regarding the report must be reported within 30 days from the date of testing.

M/s. Civil-Tech Consultants & Engineers
23/14, 7th Cross, 3rd Stage,
4th Block, Shakthiganapathinagara,
Basaveshwaranagar,
Bangalore-560079.

CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

An ISO 9001:2008 Certified Company

NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

JAS-ANZ BSCIC ISO 9001 REGISTERED

Job No.: CTCE/BBMP/W. No 07/HSN/SDBC/Shape_T/2014-15 : 18.08.2014

DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

Client	: **Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.
Agency	: **Mr. H.S. Nataraj,** Contractor, Bangalore.
Name of Work	: Improvements to asphalting roads and drains at Coffee Board Layout Main Roads in Ward No.07, BBMP, Bangalore.
Reference	: EE/BTP/BBMP-E-PMT/56/2014-15 Dated: 18.07.2014
Technical Reference	: IS 2386(Part 1) 1963 (RA 2007)
Type of Mix	: Semi Dense Bituminous Concrete
Date of Testing	: 18.08.2014





Result : Flakiness Index = **11.58%**

Elongation Index = **13.25%**

Result : Combined Flakiness & Elongation index **24.83%**

Comments:

Maximum allowable Flakiness & Elongation Index for Semi Dense Bituminous Concrete is 30%

Note:

Þ This test report should not be reproduced except in full, without written approval of the laboratory

Þ The results indicated above are based on the tests carried out on the samples collected by the laboratory

Þ Any Query regarding the report must be reported within 30 daysfrom the date of testing

M/s. Civil-Tech Consultants & Engineers
23/14, 7th Cross, 3rd Stage,
4th Block, Shakthiganapathinagara,
Basaveshwaranagar,
Bangalore-560079.

CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

An ISO 9001:2008 Certified Company

NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

JAS-ANZ BSCIC ISO 9001 REGISTERED

Job No.: CTCE/BBMP/W. No 07/HSN/SDBC/Shape_T/2014-15 : 18.08.2014

DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

Client	: **Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.
Agency	: **Mr. H.S. Nataraj,** Contractor, Bangalore.
Name of Work	: Improvements to asphalting roads and drains at Coffee Board Layout Main Roads in Ward No.07, BBMP, Bangalore.
Reference	: EE/BTP/BBMP-E-PMT/56/2014-15 Dated: 18.07.2014
Technical Reference	: IS 2386(Part 1) 1963 (RA 2007)
Type of Mix	: Semi Dense Bituminous Concrete
Date of Testing	: 18.08.2014



Result : Flakiness Index = **12.32%**

Elongation Index = **13.29%**

Result : Combined Flakiness & Elongation index **25.61%**

Comments:

Maximum allowable Flakiness & Elongation Index for Semi Dense Bituminous Concrete is 30%

Note:

Þ This test report should not be reproduced except in full, without written approval of the laboratory

Þ The results indicated above are based on the tests carried out on the samples collected by the laboratory

Þ Any Query regarding the report must be reported within 30 daysfrom the date of testing

M/s. Civil-Tech Consultants & Engineers
23/14, 7th Cross, 3rd Stage,
4th Block, Shakthiganapathinagara,
Basaveshwaranagar,
Bangalore-560079.

CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

An ISO 9001:2008 Certified Company

NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

JAS-ANZ BSCIC ISO 9001 REGISTERED

Job No.: CTCE/BBMP/W. No 07/HSN/SDBC/Stripping/2014-15 20.08.2014

Stripping Value of Road Aggregates (Static Immersion Test)

IS: 6241

Client	**Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.
Agency	**Mr. H.S. Nataraj,** Contractor, Bangalore.
Name of the work	Improvements to asphalting roads and drains at Coffee Board Layout Main Roads in Ward No.07, BBMP, Bangalore.
Reference	EE/BTP/BBMP-E-PMT/56/2014-15 Dated: 18.07.2014
Type of Mix	Semi Dense Bituminous Concrete
Date of Testing	20.08.2014



Type of binder : 80/100
Percentage of binder used : 5.0% by wt.
Total weight of aggregate : 200 g
Total weight of binder : 10.0 g
Temperature of water-bath : 40° C

Observation Number	Stripping, Percentage	Average, Percentage	Average Retained Coating, %
1	3.1	3.20	96.80
2	3.2		
3	3.3		



Comments:

→ Minimum allowable Aggregate retained coating for Semi Dense Bituminous Concrete is 95%

Note:

Þ This test report should not be reproduced except in full, without written approval of the laboratory

Þ The results indicated above are based on the tests carried out on the samples received in the laboratory

Þ Any Query regarding the report must be reported within 30 days from the date of testing.

M/s. Civil-Tech Consultants & Engineers
23/14, 7th Cross, 3rd Stage,
4th Block, Shakthiganapathinagara,
Basaveshwaranagar,
Bangalore-560079.

CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

An ISO 9001:2008 Certified Company

NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

JAS-ANZ BSCIC ISO 9001 REGISTERED

Job No.: CTCE/BBMP/W. No 07/HSN/SDBC/Sp_Wa/2014-15



20.08.2014

Specific Gravity And Water Absorption Test

IS: 2386 Part III

Client	**Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.
Agency	**Mr. H.S. Nataraj,** Contractor, Bangalore.
Name of the Work	Improvements to asphalting roads and drains at Coffee Board Layout Main Roads in Ward No.07, BBMP, Bangalore.
Reference	EE/BTP/BBMP-E-PMT/56/2014-15 Dated: 18.07.2014
Type of Mix	Semi Dense Bituminous Concrete
Source / Location	Hotmix Plant, Bangalore
Date of Testing	20.08.2014

Sl. No.	Details	Notation	Test Number			Mean Value
			Test 1	Test 2	Test 3	
1	Weight of aggregate suspended in water with the basket	W_1 g	2026	2025	2024	
2	Weight of basket suspended in water	W_2 g	755	2020	755	
3	Weight of saturated aggregate in water	$(W_1 - W_2) = W_s$ g	1271	1270	1269	
4	Weight of saturated surface dry aggregate in air	W_3 g	2015	2016	2018	
5	Weight of water equal to the volume of the aggregate	$(W_3 - W_S)$ g	744	746	749	
6	Weight of oven dried aggregate	W_4 g	1999	2001	2003	
7	Specific Gravity	$W_4/(W_3-W_S)$	2.687	2.682	2.674	2.681
8	Apparent Specific gravity	$W_4/(W_4-W_S)$	2.746	2.737	2.729	2.737
9	Water Absorption	$((W_3-W_4)*100)/W_4$	0.80%	0.75%	0.75%	0.77%

Comments:

→ Maximum allowable Aggregate Water absorption value for Semi Dense Bituminous Concrete is 2.0%

Note:

Þ This test report should not be reproduced except in full, without written approval of the laboratory

Þ The results indicated above are based on the tests carried out on the samples received in the laboratory

Þ Any Query regarding the report must be reported within 30 days from the date of testing.

M/s. Civil-Tech Consultants & Engineers
23/14, 7th Cross, 3rd Stage,
4th Block, Shakthiganapathinagara,
Basaveshwaranagar,
Bangalore-560079.

#23/14, 7th Cross, 3rd Stage, 4th Block, Shakthi Ganapathi Nagara, Basaveshwaranagar, Bangalore-79.

Tele Fax : 23223227, Website : www.civiltechconsultants.com

E-mail : vishwanath.ia@civiltechconsultants.com / info@civiltechconsultants.com

CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

An ISO 9001:2008 Certified Company

NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

JAS-ANZ BSCIC ISO 9001 REGISTERED

Job No.: CTCE/BBMP/W. No 07/HSN/SDBC/Bit/2014-15 20.08.2014

BITUMEN CONTENT DETERMINATION OF SEMI DENSE BITUMINOUS CONCRETE MIX AS per IRC:SP:-1984

CLIENT	**Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.
AGENCY	**Mr. H.S. Nataraj,** Contractor, Bangalore.
NAME OF THE WORK	Improvements to asphalting roads and drains at Coffee Board Layout Main Roads in Ward No.07, BBMP, Bangalore.
REFERENCE	EE/BTP/BBMP-E-PMT/56/2014-15 Dated: 18.07.2014
SAMPLE I/D	Roads in Coffee Board Layout in Ward No.07, BBMP, Bangalore.
DATE OF TESTING	20.08.2014



BITUMEN CONTENT DETERMINATION

Description	Trail 1	Trail 2
1. Weight of Mixture before Test, g	500	500
2. Weight of Mixture after Test, g	474	475
3. Weight of Asphalt and Mineral matter Extracted, g	-	-
4. Weight of Mineral Matter, g.	-	-
5. Weight of Ash, g		
6. Weight of Bitumen Extracted, g. (corrected)	26	25.00
7. Bitumen content in %	5.20	5.00
8. Average	**5.10**	

Civil Tech Consultants & Engineers Bangalore

Note:

- This test report should not be reproduced except in full, without written approval of the laboratory
- The results indicated above are based on the tests carried out on the samples received in the laboratory
- Any Query regarding the report must be reported within 30 days from the date of testing.

M/s. Civil-Tech Consultants & Engineers
23/14, 7th Cross, 3rd Stage,
4th Block, Shakthiganapathinagara,
Basaveshwaranagar,
Bangalore-560079.

CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

An ISO 9001:2008 Certified Company

NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

JAS-ANZ BSCIC ISO 9001 REGISTERED

Job No.: CTCE/BBMP/W. No 07/HSN/SDBC/Bit/2014-15 20.08.2014

BITUMEN CONTENT GRADATION DETERMINATION OF SEMI DENSE BITUMINOUS CONCRETE MIX

As per IS2386 and IRC:SP:11-1984

CLIENT	**Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.
AGENCY	**Mr. H.S. Nataraj,** Contractor, Bangalore.
NAME OF THE WORK	Improvements to asphalting roads and drains at Coffee Board Layout Main Roads in Ward No.07, BBMP, Bangalore.
REFERENCE	EE/BTP/BBMP-E-PMT/56/2014-15 Dated: 18.07.2014
SAMPLE I/D	Roads in Coffee Board Layout in Ward No.07, BBMP, Bangalore
DATE OF TESTING	20.08.2014



GRADATION AFTER EXTRACTION

Sieve Size in mm	Trail 1				Specified Limits as per MORTH specification table 500-15 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
13.2	0	0	0	100	100
9.5	25.32	5.34	5.34	94.66	90-100
4.75	256.4	54.09	59.43	40.57	35-51
2.36	60.22	12.70	72.14	27.86	24-39
1.18	41.32	8.72	80.86	19.14	15-30
0.3	34.23	7.22	88.08	11.92	9-19
0.075	30.26	6.38	94.46	5.54	3-8

Sieve Size in mm	Trail 2				Specified Limits as per MORTH specification table 500-15 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
13.2	0	0	0	100	100
9.5	29.36	6.18	6.18	93.82	90-100
4.75	266.3	56.06	62.24	37.76	35-51
2.36	56.32	11.86	74.10	25.90	24-39
1.18	36.32	7.65	81.75	18.25	15-30
0.3	29.32	6.17	87.92	12.08	9-19
0.075	25.32	5.33	93.25	6.75	3-8

Civil-Tech Consultants & Engineers Bangalore

Note:

- This test report should not be reproduced except in full, without written approval of the laboratory
- The results indicated above are based on the tests carried out on the samples received in the laboratory
- Any Query regarding the report must be reported within 30 days from the date of testing.

M/s. Civil-Tech Consultants & Engineers

23/14, 7th Cross, 3rd Stage,
4th Block, Shakthiganapathinagara,
Basaveshwaranagar,
Bangalore-79.

#23/14, 7th Cross, 3rd Stage, 4th Block, Shakthi Ganapathi Nagara, Basaveshwaranagar, Bangalore-79.

Tele Fax : 23223227, Website : www.civiltechconsultants.com

E-mail : vishwanath.ia@civiltechconsultants.com / info@civiltechconsultants.com

CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

An ISO 9001:2008 Certified Company

NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

JAS-ANZ BSCIC ISO 9001 REGISTERED

Job No.: CTCE/BBMP/W. No 07/HSN/SDBC/AGG/2014-15 20.08.2014

Aggregate Gradation Test

IS : 2386 Part I

Client	**Asst. Executive Engineer**, Kodigehalli Sub Division, BBMP, Bangalore.
Agency	**Mr. H.S. Nataraj,** Contractor, Bangalore.
Name of the Work	Improvements to asphalting roads and drains at Coffee Board Layout Main Roads in Ward No.07, BBMP, Bangalore.
Reference	EE/BTP/BBMP-E-PMT/56/2014-15 Dated: 18.07.2014
Sample I / D	Hot Mix Plant, Bangalore
Type of Mix	Semi Dense Bituminous Concrete (SDBC)
Date of Testing	20.08.2014



Total Weight of Sample: **5150** gm

SIEVE SIZE, mm	Weight Retained, gm	% Retained	Cummulative % Retained	% Passing	Grade-II As per MORTH	Remarks
13.2	0	0.0	0	100	100	Gradation satisfies Grade-II MORTH specification
9.5	390	7.6	7.57	92.43	90-100	
4.75	2585	50.2	57.77	42.23	35-51	
2.36	685	13.3	71.07	28.93	24-39	
1.18	485	9.4	80.49	19.51	15-30	
0.3	275	5.3	85.83	14.17	9-19	
0.075	345	6.7	92.52	7.48	3-8	

Total Weight of Sample: **5250** gm

SIEVE SIZE, mm	Weight Retained, gm	% Retained	Cummulative % Retained	% Passing	Grade-II As per MORTH	Remarks
13.2	0	0.0	0	100	100	Gradation satisfies Grade-II MORTH specification
9.5	350	6.7	6.67	93.33	90-100	
4.75	2510	47.8	54.48	45.52	35-51	
2.36	750	14.3	68.76	31.24	24-39	
1.18	420	8.0	76.76	23.24	15-30	
0.3	355	6.8	83.52	16.48	9-19	
0.075	485	9.2	92.76	7.24	3-8	

Note:

Þ This test report should not be reproduced except in full, without written approval of the laboratory.

Þ The results indicated above are based on the tests carried out on the samples received in the laboratory.

Þ Any Query regarding the report must be reported within 30 days from the date of testing.

Civil-Tech Consultants & Engineers Bangalore

M/s. Civil-Tech Consultants & Engineers
23/14, 7th Cross, 3rd Stage,
4th Block, Shakthiganapathinagara,
Basaveshwaranagar,
Bangalore-560079.